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CLAIMS

1. Apparatus for exposing, in a binary manner, a photoreceptive surface having a width and having relative movement with an irradiator in a direction perpendicular to the width, comprising:

an irradiator comprising a plurality of rows of substantially identical light sources, each said row of light sources having an axis generally directed along said width, said rows being spaced in a direction generally perpendicular to said width to form a generally rectangular array of light sources; and

a controller that controls activation of the light sources to selectively irradiate portions of said photoreceptive surface to form a latent image thereon during said relative motion, using fewer than all of the light sources available for illuminating a pixel to be printed,

wherein the controller controls the activation of the light sources such that at least some pixels in a row are exposed utilizing light sources from different rows of light sources;

characterized in that the controller controls the light sources such that each of said pixels to be printed that is irradiated is exposed to a same amount of light.

2. Apparatus according to claim 1, wherein when rows of pixels to be printed are each illuminated by two rows of light sources, one row of light sources illuminating pixels on one end of a row of pixels and a second row of light sources illuminating pixels on the other end of the row of pixels, with both rows illuminating pixels in an overlap region of the row of pixels to be printed, wherein light sources outside the overlap region are controlled by said controller such that each of said pixels to be printed that is irradiated is exposed to a same amount of light.

3. Apparatus according to claim 1 wherein the light sources comprise light emitting diodes.

4. Apparatus according to claim 1 or claim 3, wherein each row of said plurality of rows of light sources are on a different print head.

5. Apparatus according to any of claims 1-4, wherein more than one of said plurality of rows of light sources are on a single print head.

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6. Apparatus according to any of claims 1-4, wherein all of said plurality of rows of light sources are on a single print head.

7. Apparatus according to claim 5 or claim 6 wherein at least two of said plurality of rows are formed on a monolithic substrate.

8. Apparatus according to any of the preceding claims wherein said plurality of rows comprises fewer than four rows.

9. Apparatus according to any of claims 1-7 wherein said plurality of rows comprises between five and nine rows.

10. Apparatus according to any of claims 1-7 wherein said plurality of rows comprises ten of more rows.

11. Apparatus according to any of the preceding claims wherein said controller is operative to expose pixels along a column of pixels utilizing a light source situated in said column chosen in a random or quasi-random manner.

12. Apparatus according to any of claims 1-10, wherein said light sources are chosen in accordance with a fixed repeat.

13. Apparatus according to claim 12 wherein the light sources from which the exposing light sources are chosen, comprise a set of light sources, chosen to minimize artifacts.

14. Apparatus according to any of the preceding claims wherein said controller is operative to expose pixels along a column of pixels utilizing a plurality of light sources situated in said column.

15. Apparatus according to any of the preceding claims and including a motor that provides motion of said photoreceptor.

16. Apparatus according to any of the preceding claims and including a position sensor that provides an indication of position of said photoreceptor with respect to said rows of light sources.

17. Apparatus according to claim 16 wherein said controller activates said light sources, responsive to said indication of position.

18. Apparatus according to claim any of the preceding claims wherein the photoreceptive surface is a charged photoconductive surface and wherein exposure to light of the light sources selectively discharges the surface.

19. Printing apparatus comprising:

apparatus according to claim 18; and

a developer that develops the latent image with a colored toner to form a developed image thereon;

said printing apparatus including a transfer station at which said developed image is transferred to a final substrate.

20. Apparatus according to claim 19 wherein the colored toner is a powdered toner.

21. Apparatus according to claim 19 wherein the colored toner is a liquid toner.

22. Apparatus according to any of claims 1-18 wherein the photoreceptor is a photosurface and wherein exposure from said light sources forms a latent image in said photosurface that can be chemically developed to form a visible image.

23. Photo-printing apparatus, comprising:

a latent image forming device for a photosurface according to claim 22; and

a developer that chemically develops the latent image to form a visible image.

24. Photo-printing apparatus, comprising:

a plurality of latent image forming devices for a photosurface according to claim 24; each said device emitting light of a different color; and

a developer that chemically develops the latent image to form a visible image.

25. Apparatus according to claim 24, wherein the colors include red, green and blue.

26. A method of pixelized image formation on a photosensitive surface, comprising:

providing relative motion of the photosensitive surface relative to a multiplicity of light sources, such that pixels to be printed on the surface pass a plurality of said light sources; and

exposing a plurality of the pixels to be printed of the surface to more than one, but fewer than the plurality, of said light sources, characterized in that the exposure of the exposed pixels to be printed is the same.

27. A method according to claim 26, wherein when rows of pixels to be printed are each illuminated by two rows of light sources, one row of light sources illuminating pixels on one end of a row of pixels and a second row of light sources illuminating pixels on the other end of the row of pixels, with both rows illuminating pixels in an overlap region of the row of pixels to be printed, wherein light sources outside the overlap region are exposed to a same amount of light.

28. A method according to claim 26 wherein the at least one pixel is exposed to one or more of the light sources chosen randomly or quasi-randomly.

29. A method according to claim 26 wherein said one or more light sources is chosen in accordance to a predetermined repeat to reduce visual artifacts.

30. A method according to any of claims 26-29 wherein a plurality of pixels are exposed in accordance with the method.

31. A method according to any of claims 26-30, wherein the image thus formed is a latent image and including developing the latent image to form a visible image.

32. A method according to claim 31 wherein said developing comprises contacting the surface with a toner.

33. A method according to claim 31 whercin developing comprises chemical development.